

FIG. 1A

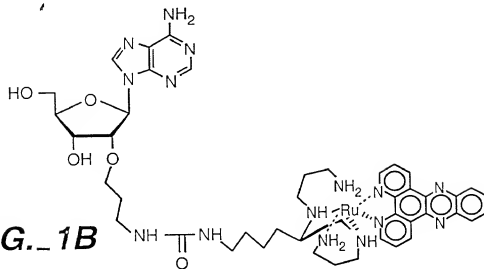


FIG. 1B

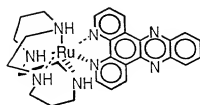


FIG._1C

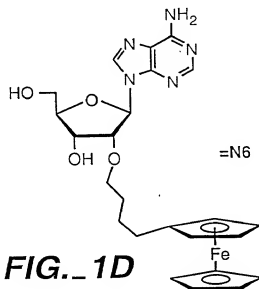


FIG._1D

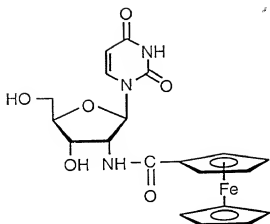


FIG. 1E

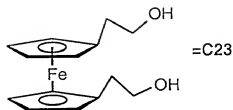


FIG. 1F

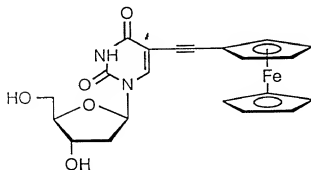


FIG. 1G

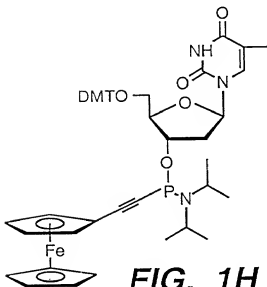


FIG. 1H

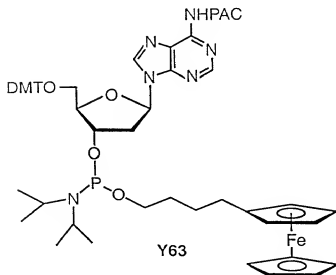


FIG. 1I

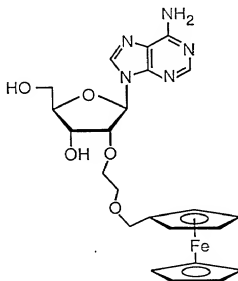


FIG. 1J

00000000-00000000

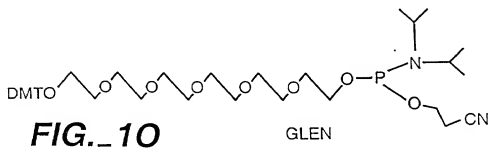
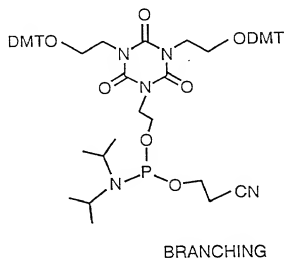
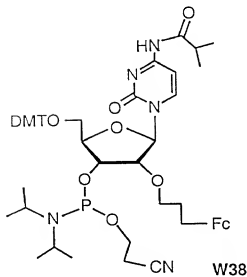
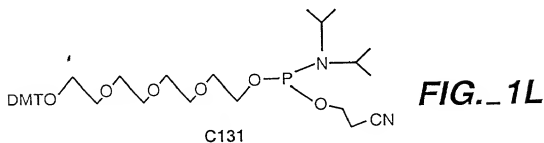
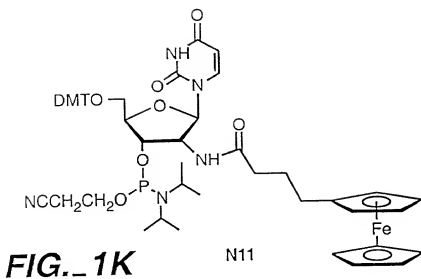
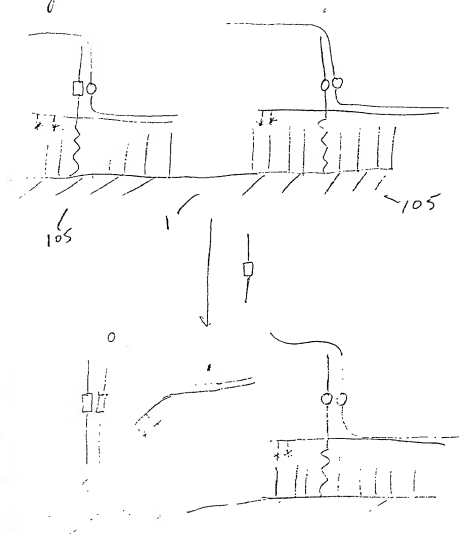


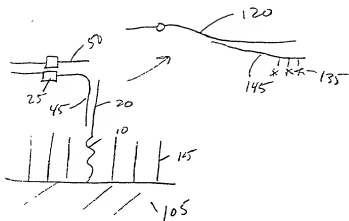
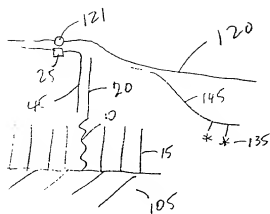
Fig 18.



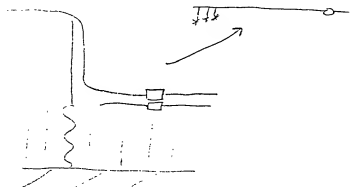
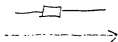
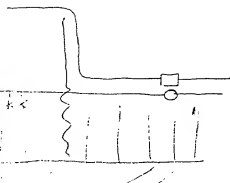
09525096.072503

A

FIGURE 18.3



B



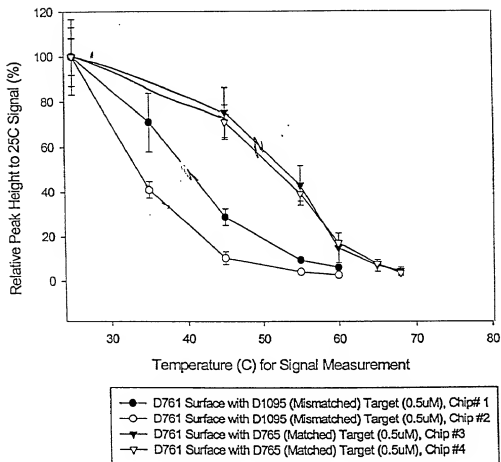
C

Fig 18, CONT

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Fig 4

TM for Mismatch and Perfect Matched HIV Sandwich



Signal Replacement from Mismatched Target to Matched Targets (0.25uM)

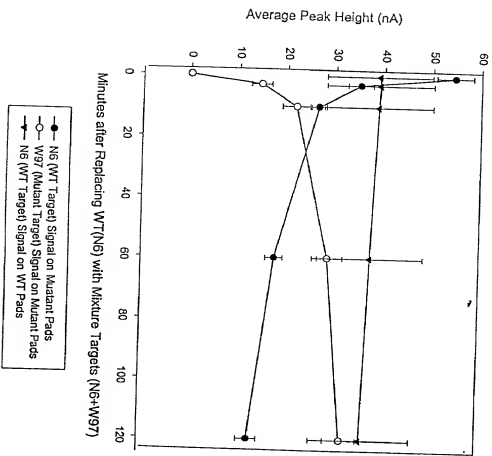
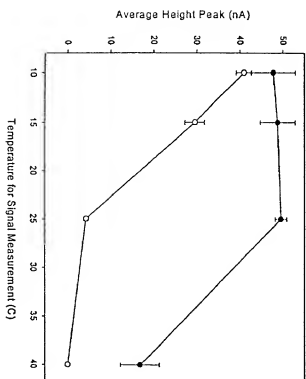


Fig 18
5

Electrochemical Signal from Ligated and Unligated DNA oligos



Fus 2/11/16

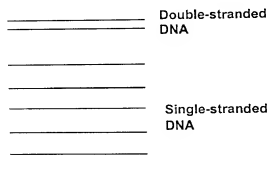
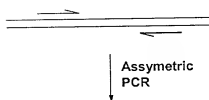
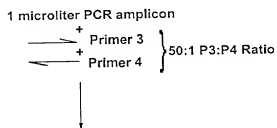
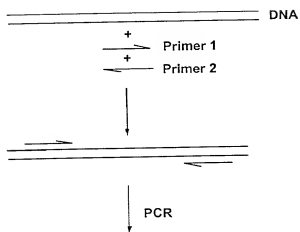
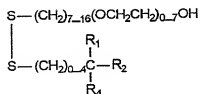


Fig 28
7

000000-07000

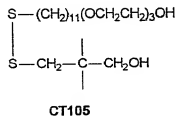
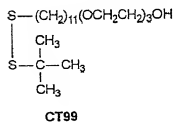
Scheme I, General Formula of Asymmetric Disulfides as Insulators

Fig 8A

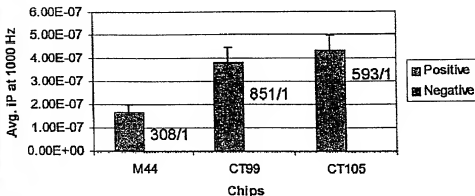


R₁, R₂ and R₃: H, CH₃, *t*-butyl, cycloalkyl, CH₂OH, CH₂NH₂, CONH₂, COOH, CH₂OPO₃²⁻, aromatic, adamantyl

Two Examples of Insulators

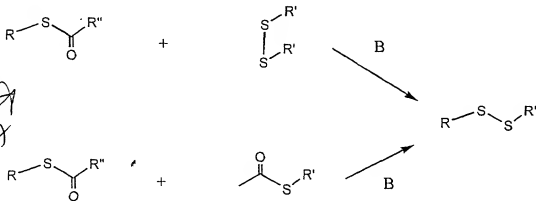


M44,CT99,CT105 for 8Fc(D772) system
with Signal/Background Ratio



be C1 to C20 alkyl or aromatic derivatives, R' could be any C1 to C20 alkyl or aromatic derivatives, and R'' could be any C1 to C20 alkyl or aromatic derivatives. B could be any bases such as NaOH, KOH, LiOH, or MOR, here M as a metal.

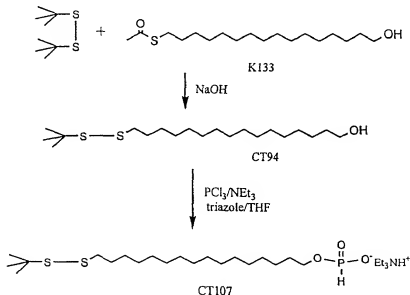
Scheme 1



The detail invention was disclosed as the following examples. The new methods have been applied to the synthesis of H-phosphonate (Example 1), CPG (Example 2 and Example 3), and insulators (Example 4).

Example 3 compared the application of this invention to preparation of N150, which had been used to synthesize CPG with disulfide linkers. As the literature Method A, the synthesis of N150 from K136 will need four step transformations, however, N150 could be obtained in single step from K136 applying this invented Method B.

Example 1



Example 2

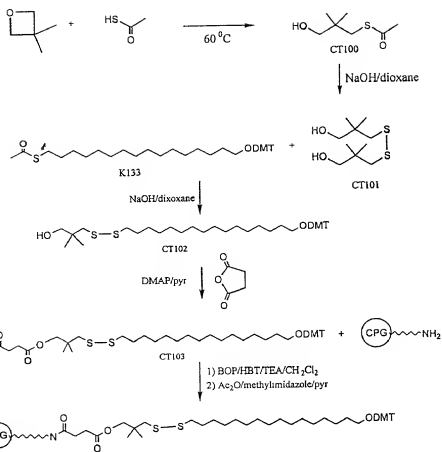
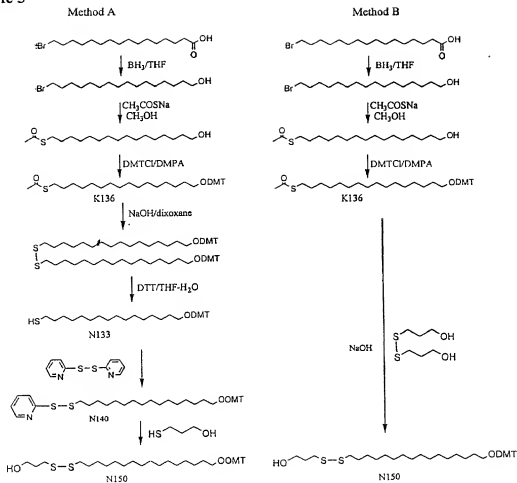


Fig 820
9D



Example 4

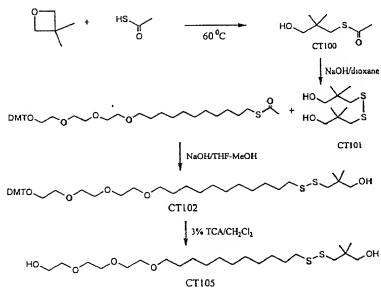
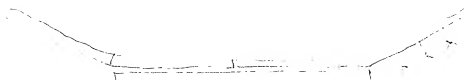


Fig 10



↓ ligase

—

add
ligase = +



09626096-072600

11

The diagram illustrates a chemical reaction on a surface. On the left, a vertical surface is covered with a monolayer of molecules. Each molecule consists of a long hydrocarbon chain (represented by a zigzag line) and a terminal group 'R'. A 'Masking Molecule' (represented by a rectangle) is attached to the surface, partially covering the monolayer. An arrow labeled 'Photolysis or Chemical Reaction' points to the right. On the right, the monolayer is shown after the reaction. The masking molecule has been removed, and the terminal group 'R' has been replaced by a functional group 'R'.

A

Scheme 2

Photolysis at 265 nm

13

0698 *Chrysomelidae*: *Chrysomelinae*: *Chrysomelini*.
Chrysomela sp. n. (new species).
Length: 1.5 mm.
Color: Black.
Habitat: Forest.

Post Synthesis of Multi-Ferrocene Oligonucleotides

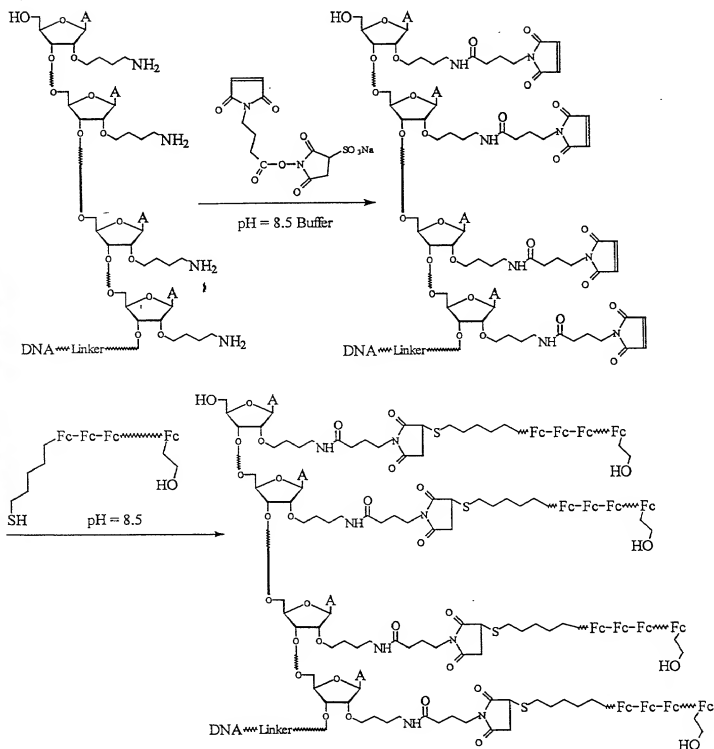
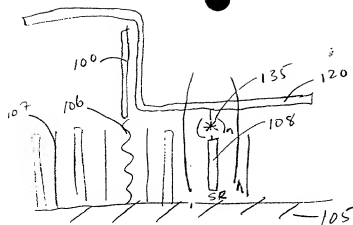
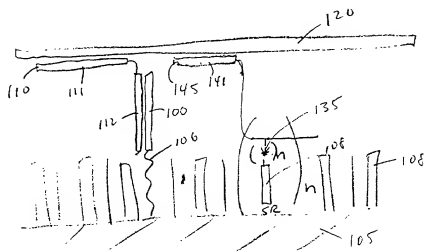


FIGURE 19
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A



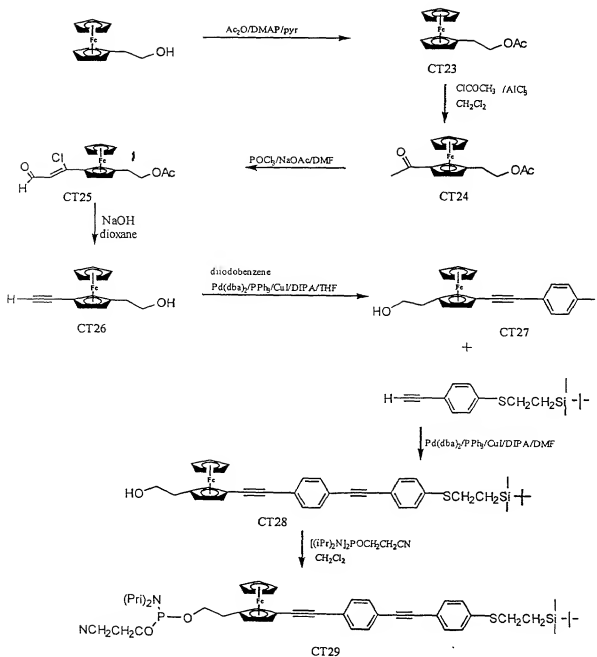
B

0625096-072500

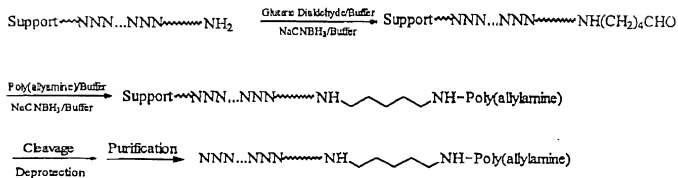
FIGURE 20

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Scheme 1



Scheme I, Introduction of Poly(allylamine) into DNA on Solid Phase



Scheme II, Introduction of Ferrocenes After Hybridization

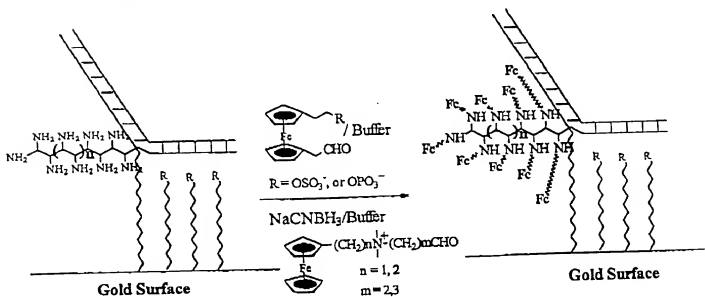
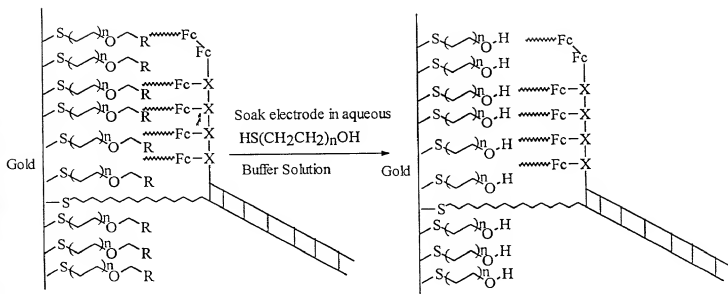


FIGURE 20
15

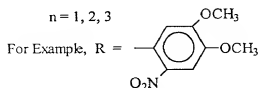
FIGURE 23

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Scheme I, Thiols Exchange Diagram



$n = 1, 2, 3$



W150, $n=1$, $\text{R} = 4,5\text{-dimethoxy-2-nitrobenzyl}$

C163, $n=2$, $\text{R} = 4,5\text{-dimethoxy-2-nitrobenzyl}$

W155, $n=3$, $\text{R} = 4,5\text{-dimethoxy-2-nitrobenzyl}$

$n = 1, 2, 3$

